

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NEW MEXICO

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
vs.	)	CR NO. 19-3333 WJ
	)	
MALCOLM TORRES,	)	
	)	
Defendant.	)	

**UNITED STATES' RESPONSE TO DEFENDANT'S  
OBJECTION TO THE GOVERNMENT'S NOTICE OF  
CAST EXPERTS AND REQUEST FOR A *DAUBERT* HEARING**

The United States of America responds to the Defendant's *Objection to the Government's Notice of Cast Experts and Request for a Daubert Hearing* (Doc. 152, filed February 28, 2023) as follows.

**FACTS**

1. On November 28, 2022, the United States filed its initial expert disclosures pursuant to Fed. R. Crim. P. 16(c). *United States' Notice of Intent to Offer Expert Witness Testimony* (Doc. 106). The United States therein made this relevant disclosure:

**Cellular Analysis Survey Team**

Sean Macmanus is an agent with the Federal Bureau of Investigation and a member of the Cellular Analysis Survey Team. Russell Romero is an agent with the Federal Bureau of Investigation. In their respective capacities, Agents Macmanus and Romero analyzed the Google Geofence records associated with the Defendant's email address, conducted the historical cell site analysis on the Defendant's cellular telephone, and analyzed/inspected that same phone. The reports associated with that analysis, which sets forth methodology they employed, the data they extracted, and conclusions they drew, have previously been disclosed to the Defendant. (Bates 18139-18173; 021162-021210; 021269-021322, 021765-021776; 024670-24707). The curriculum vitae for both Agent Romero and Macmanus, which details their respective education, training, experience, and specialized knowledge, has previously been disclosed to the Defendant.

2. Rule 16 was amended in 2022 to require additional specificity in parties' disclosures concerning their expert witnesses. This amendment, which applies to this case and all pending cases absent a particularized finding, became effective on December 1, 2022.<sup>1</sup>
3. On January 16, 2023, the United States amended its expert disclosure. *United States' Amended Notice of Intent to Offer Expert Witness Testimony* (Doc. 131).<sup>2</sup> The United States therein made this relevant disclosure, which both proposed experts acknowledged as substantively accurate:

**Cellular Analysis Survey Team**

Sean Macmanus is an agent with the Federal Bureau of Investigation and a member of the Cellular Analysis Survey Team. Russell Romero is an agent with the Federal Bureau of Investigation. In their respective capacities, Agents Macmanus and Romero analyzed the Google Location History records associated with the Defendant's email address, conducted the historical cell site analysis on the Defendant's cellular telephone records, and analyzed/inspected that Defendant's cellular telephone. The reports associated with that analysis, which sets forth methodology they employed, the data they extracted, and conclusions they drew, have previously been disclosed to the Defendant. (Bates 18139-18173; 021162-021210; 021269-021322, 021765-021776; 024670-24707). In particular, Agents Macmanus and Romero will testify that on September 9, 2019, they transmitted a request to Google and Verizon for records pursuant to the emergency provision of the Stored Communications Act set forth in 18 U.S.C. § 2702(c)(4). That same day, Google and Verizon lawfully and voluntarily provided to FBI call detail records (i.e., the numbers of calls that were placed and received by the Defendant's phone), tower information (i.e., the locations of the cell towers off of which the phone pinged), and other location information based on GPS, WiFi, and cell tower signals. In terms of specifics, Google returned subscriber information and location data for one of the Defendant's Gmail accounts. Google's records covered the time frame from the evening of September 5 to roughly 3 a.m. on September 9. Verizon returned location data from the period covering September 6 through September 9, 2019. In total, the agents received approximately 1,326 location hits from the Google records, and other hits associated with Verizon.

After Jane Doe's body was found, the FBI sought and obtained numerous search warrants, two of which are pertinent to this notice. The first warrant, which was signed on

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<sup>1</sup> The United States is not asserting this Court should apply Rule 16 as is existed prior to December 1, 2022, which would be the case if application of the new version of the rule "would not be feasible or would work injustice, in which event the former rule applies." 28 U.S.C. § 2074(a).

<sup>2</sup> Defendant identifies this document as number 133. *Def.'s Mtn.* p. 8. Document 133, however, is *United States' Sealed Motion to Admit Evidence Pursuant to Federal Rule of Evidence 404(B)*.

September 12, 2019, by United States Magistrate Judge Laura Fashing, was for the Defendant's black Samsung phone and the second warrant, which was signed on October 17, 2019, by United States Magistrate Judge Steven Yarbrough, was directed at Google and sought "Geofence" data. Through these warrants, Agents Macmanus and Romero obtained roughly the same location and associated data they had previously received via the emergency provisions of the Stored Communications Act. The differences in the data received from the Google warrant and combined exigency request was that the exigency request covered a slightly longer time frame. Specifically, the exigency data included about six additional hours of data that covered the period from the evening of September 5 into the early morning of September 6, and an additional several hours of data into the morning of September 9. Consequently, the agents received 256 fewer Google location hits from the warrant as compared to the exigency request.

Through these records, Agents Macmanus and Romero identified general geographic areas at which a device associated with the Defendant was present during the pertinent time periods. Agents Macmanus and Romero intend to testify that, in their expert opinions, the device associated with the Defendant was in the general areas demonstrated in their reports by either the cell phone tower providing service to the device, in the case of Verizon, or in the areas provided by Google based on GPS, Wifi, and/or cell tower signals received from the device on the dates and times specified in their reports.

The curriculum vitae for both Agent Romero and Macmanus, which details their respective education, training, experience, specialized knowledge, and previous testimony has previously been disclosed to the Defendant.

4. On February 28, 2023, Defendant filed the *Motion* at issue.<sup>3</sup> Defendant therein argues the government's amended expert disclosure lacks the following information:

- Specificity regarding the data CAST agents "extracted" and used to generate their reports. *Def.'s Mtn.* p. 9.
- What type of analysis the agents used to generate their reports ("granularization, Real Time Tool, or some other analytical method"). *Id.* pp. 3, 9, 10.
- Explanation of the methodology used to estimate Defendant's locations. *Id.* pp. 3, 9, 11, 12.
- Explanation as to how the experts' "training and experience" enabled them to reach their conclusions regarding Defendant's locations. *Id.* pp. 3, 12.
- Explanation regarding diagrams in the CAST reports, including distances associated with the circles and arcs and the program used to create the maps. *Id.* p. 10.
- Basis for the scientific reliability of CAST reports. *Id.* p. 3.
- Scholarly articles supporting experts' opinions. *Id.*
- Opinions of Agents Romero and Macmanus. *Id.* p. 12.

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<sup>3</sup> The United States is unclear whether Defendant wishes to exclude Agent Romero, Agent Macmanus, or both. Page 1 of Defendant's *Motion* only mentions Agent Romero; page 14, however, mentions both agents. The United States assumes for purposes of this response that Defendant's requested relief is directed towards excluding both agents.

## **ARGUMENT**

Without conceding any claimed deficiency in its amended expert disclosure, the United States herein endeavors to provide Defendant and this Court with the information Defendant claims to be lacking.

### **1. Data used to generate the CAST reports**

In this case, agents created multiple draft CAST reports to assist the case agent with an evolving criminal investigation. In other words, as the case agent developed new leads and obtained new evidence, the CAST agent would use those new materials to generate additional draft reports, usually building upon prior known data and draft reports.

Agents relied upon five categories of data to create the CAST reports provided to Defendant.

1. Location information obtained from Verizon to ascertain the general location of Defendant's Verizon cell phone. (Bates no. 18139-18173, dated Feb. 6, 2020).
2. Location data obtained from Google to ascertain the general location of Defendant's same Verizon cell phone. (Bates no. 21163-21210, dated Aug. 18, 2020).
3. Location information obtained through the Cellebrite extraction of Defendant's same Verizon cell phone to ascertain the general location of that phone. (Bates no. 21269-21322, dated Nov. 21, 2020).
4. Geofence records provided by Google to ascertain the general location of Defendant's same Verizon cell phone. (Bates no. 21765-21776, dated May 5, 2021).<sup>4</sup>
5. Verizon's tower list, which lists the locations of each Verizon cell-phone tower.

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<sup>4</sup> The fifth CAST report provided to Defendant (Bates no. 24670-24703) is a duplicate of the CAST report dated February 6, 2020.

## **2. Software used to generate the CAST reports**

Agent Macmanus used ESPA (“Enterprise Sensor Processing and Analytics”), a graphical-information program produced by Gladiator Forensics (<https://gladiator-forensics.com>), to generate his draft CAST report. His mapping is based upon Google Maps and OpenStreetMap. Data from Google and Verizon was originally provided to agents in Microsoft Excel format. Agents utilized Microsoft PowerPoint to create the draft CAST report from ESPA.

## **3. Methodology and analysis used to generate the CAST reports**

Agent Macmanus utilized an analytical technique referred to as mobile-device-location analysis,<sup>5</sup> which essentially equates to analyzing location-based records (from Google, Verizon, and Defendant’s cell phone) to generally show the location of Defendant’s cell phone at a given moment in time. Here, this technique involved analyzing records, including call-detail records, obtained for Defendant’s Verizon cell phone. These records documented the network interaction to and from Defendant’s cell phone. Additionally, the records documented the cell tower and cell sector which served his cell phone during this activity. Used in conjunction, the call-detail records and a list of cell-site locations illustrate an approximate location of Defendant’s cell phone when he initiated network contact. Based on this analysis, Agent Macmanus determined an approximate location of Defendant’s phone when he initiated contact with the network. Agent Macmanus took the data from the provider, originally in a Microsoft Excel format, and used ESPA to prepare a draft report with maps from Google Maps and OpenStreetMaps, detailing the respective towers and sectors utilized by each device during specified time periods.

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<sup>5</sup> Law enforcement used to refer to this technique as “call-detail-record analysis,” which as its name implies only applied to phone companies. With the emergence of other types of data-retaining entities (like Google and Facebook), the term has been broadened.

#### 4. Agent Macmanus' training and experience

FBI agents undergo specialized training upon joining CAST, including education on radiofrequency theory and analysis and instruction from major cell-service providers and their radiofrequency engineers on network maintenance and operation. *See United States v. Morgan*, 292 F. Supp. 3d 475, 478 (D.D.C. 2018), *aff'd*, 45 F.4th 192 (D.C. Cir. 2022) (listing a CAST agent's training requirements before ultimately denying a defendant's request to exclude that proposed expert). In addition, CAST members have a yearly retraining course that includes instruction on any relevant updates. *Id.* Agent Macmanus is one of 18 full-time FBI CAST agents.

Agent Macmanus relied heavily upon his training and experience to create each draft CAST report. His training and experience are detailed in his *curriculum vitae*, which was previously provided to Defendant's counsel. He has successfully participated in trainings given by every major technology company, to include Verizon and Google. These intensive trainings taught Agent Macmanus how these companies' systems work, the detail contained in their respective records, and how to correctly interpret those records. Agent Macmanus has, for over seven years, used this specific technique hundreds of times and has successfully located missing or deceased persons, kidnap victims, fugitives, evidence, and phones.

#### 5. Scientific reliability of CAST reports

The United States' proposed testimony is not novel, surprising, or untested. The reasoning and methodology underpinning CAST reports is scientifically reliable. *See United States v. Hill*, 818 F.3d 289 (7th Cir. 2016) (finding that historical cell-site science is "well understood," "can show with sufficient reliability that a phone was in a general area" and "the technique has been subjected to public and peer criticism, if not peer review"); *United States v. Lewisbey*, 843 F.3d 653, 659 (7th Cir. 2016) (holding that "[u]sing call records and cell towers to determine the general

location of a phone at specific times is a well-accepted, reliable methodology.”). The District of Kansas, for instance, just last month ruled that one of Agent Macmanus’ CAST colleagues could testify as an expert regarding historical cell-site-location data involving records provided by T-Mobile and Snapchat. *United States v. Butler*, No. 21-20027-JAR, 2023 WL 1795571, at \*4 (D. Kan. Feb. 7, 2023) (unpublished). There, citing relevant case law, the district court found it to be scientifically reliable for the CAST expert to testify as to a device’s general location (“within a few city blocks of a densely populated urban area”) at a specific time. *Id.* at \*6-7 (further finding that the agent’s stated methodology passed muster).

Prior to finalizing his expert report, Agent Macmanus’ draft CAST report (Bates no. 21269-21322, dated Nov. 21, 2020) will be subjected to peer review by another CAST-certified agent, who will review and critique his final product.

## **6. Specifics of the CAST reports**

Defendant requested an explanation of the diagrams in the CAST reports, including distances associated with the circles and arcs and the program used to create the maps. As a preliminary matter, the United States respectfully notes that each substantive report begins with several slides explaining the methodology and inputs used, as well as a legend detailing all the features contained on each map.

Looking at any given slide, the agents will testify that Defendant’s cell phone was located somewhere along or near a given arc at the time specified. If multiple arcs intersect, agents will sometimes testify that Defendant’s cell phone was generally located at or near the area of intersection, depending on the time difference between the intersecting arcs.

The displayed arcs are individually less than 300 meters thick. The length of the arcs, which are typically 120 degrees wide, are dependent on the orientation of and distance from the relevant side (or sector) of the cell site.

## **7. Opinions of Agents Macmanus and Romero**

At trial, these agents will testify that they were able to generally locate Defendant's Verizon cell phone at a given location at a given time, *e.g.*, that the data they each analyzed, *see* para. 1, *supra*, led them to the conclusion that at a given time Defendant's cell phone appeared in the vicinity of a location (for instance) near the Rio Grande River. The agents will further testify that by comparing the successive locations of Defendant's phone over a given period, a general path of travel can be observed within a given data set.

## **8. Limitations on the CAST agents' testimony**

To be clear, neither agent will testify that the data shows Defendant to be at a specific, pinpoint spot at a particular time; rather, the agents will testify only to the data, fully acknowledging its limitations.<sup>6</sup> This is sufficient to permit both agents to testify. *See* Hon. Paul W. Grimm, *Admissibility of Historical Cell Phone Location Evidence*, Litigation, Summer 2018, at 53, 56 (observing that "the trend in the court cases that have given thoughtful consideration to [historical cell-site location] evidence is to recognize that its admissibility is contingent on the proponent accurately disclosing the limits of its reliability and the candor of the sponsoring witness in acknowledging these limits").<sup>7</sup> *See also United States v. Brown*, Case No. 18-20075, 2019 WL 3543253, at \*6 (E.D. Mich. Aug. 5, 2019) (observing that since the United States acknowledged

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<sup>6</sup> Some slides, for instance, display arrows depicting a possible path of travel of Defendant. Neither agent can testify that Defendant took this exact route, following these exact roads. Instead, each agent can confidently say that route is merely consistent with Defendant's device's location at a given point in time.

<sup>7</sup> Judge Grimm was a district-court judge in the District of Maryland. He retired on December 30, 2022.



in its *Daubert* brief that historical cell-site analysis was “only reliable to show that a cell phone was in a general area,” and assuming that at trial the United States laid a proper foundation and “accurately represents historical cell-site analysis’s limits at trial,” the expert testimony was reliable and a *Daubert* hearing unnecessary.)

### **CONCLUSION & REQUEST FOR RELIEF**

When a child goes missing, CAST-certified FBI agents play an indispensable role in the investigation and recovery of that person. *See* Ernst H. Weyand & Lori McPherson, *Enhancing Law Enforcement Response to Missing Person Cases in Tribal Communities*, 69 DOJ J. Fed. L. & Prac. 137, 145 (2021). Agents Macmanus and Romero played just such a role here, by using electronic data in a reliable fashion to reach conclusions as to the various locations of Defendant’s Verizon cell phone at given points in time. Based on the information herein provided, the United States requests this Court deny Defendant’s request to exclude the proposed expert testimony of Special Agents Macmanus and Romero.

Respectfully submitted,

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I hereby certify that on March 9, 2023, I filed the foregoing electronically through the CM/ECF system, which caused counsel for Defendant to be served by electronic means, as more fully reflected on the Notice of Electronic Filing.

/s/

Jack E. Burkhead

Assistant United States Attorney